



REQUEST FOR INFORMATION

Title: Improvement of OBIM Identification Capabilities

The Office of Biometric Identity Management (OBIM) of the Department of Homeland Security (DHS) stores and analyzes biometric data, digital fingerprints and photographs, and links that data with biographic information to identify/enroll identities and subsequently match or verify the established identities. This provides OBIM customers with actionable information on immigration violators, criminals, and known or suspected terrorists and supports immigration management and border security decision makers. OBIM's biometric identification and analysis services are used by DHS, other Federal agencies, State and local law enforcement, the intelligence community, and international partners to support counterterrorism, immigration and law enforcement, and credentialing efforts pertaining to identity services.

The purpose of this Request for Information (RFI) is to collect information from industry on current and near future technologies (including mature modifiable COTS products) supporting operational and analysis outcomes as delineated in Section II Objectives. OBIM's background is provided in Section I to give industry a frame of reference to help in the development of their responses.

I. Background:

The Department of Homeland Security (DHS) National Protection and Programs Directorate (NPPD) Office of Biometric Identity Management (OBIM) is the designated lead entity within DHS for biometric identity services. OBIM matches, stores, shares, and analyzes biometric data to provide accurate, timely, and high assurance biometric identity information and analysis to DHS and its mission partners.

OBIM's biometric identity services are an enterprise-level capability that supports national security and public safety, enabling operational missions across DHS mission areas. OBIM helps decision makers reach determinations on whether individuals pose a risk to the United States and whether they meet the requirements for a specific Government benefit or credential.

OBIM operates and maintains the Automated Biometric Identification System (IDENT), and provides identity services expertise, as a service provider for customers across the Department, at other Federal agencies, in State and local law enforcement, and overseas. OBIM supports decision makers on the front lines of homeland security with comprehensive, up-to-date identity information, helping identify Known or Suspected Terrorists and other national security threats, immigration violators, and criminals.



As of September 2014, IDENT contained more than 170 million biometric identities, and handles approximately 290,000 transactions per day to support multiple DHS Components as well as DHS mission partners.

Another key OBIM operational function is the Biometric Support Center (BSC), which supports biometric verification. The BSC provides expert fingerprint verification in support of stakeholder operations when automated means are insufficient. Highly trained fingerprint examiners perform urgent comparisons 24 hours a day, 7 days a week, to verify fingerprints that either, match an OBIM record, or that OBIM cannot verify using its automated matching system.

OBIM's biometric identity services customers include interagency customers. OBIM provides comprehensive biometric identity information through interoperability and biometric data sharing with the Department of Justice (DOJ) and their Next Generation Identification (NGI) system and the Department of Defense (DOD) and their Automated Biometric Identification System (ABIS). OBIM is also fully operable with the Department of State (DOS) and has information sharing agreements with several foreign governments.

A variety of users within the Department currently depend on OBIM's services. They include U.S. Customs and Border Protection (CBP), U.S. Citizenship and Immigration Services (USCIS), Immigration and Customs Enforcement (ICE), and the U.S. Coast Guard (USCG). These Components rely on OBIM's identity services to identify known or suspected terrorists, to help determine whether to grant immigration benefits or access to the United States, and to evaluate whether to take enforcement actions. Recent OBIM customers include the Federal Emergency Management Agency (FEMA), the Office of the Chief Security Officer (OCSO), and the Transportation Security Agency (TSA).

OBIM is proactively addressing its next-generation architecture and capabilities for replacing the current biometric system. The vision for this activity represents a major investment to ensure that OBIM can continue to accommodate the expected growth of populations and new applications of multimodal biometric identity screening based on OBIM mission and our customers' identity service needs. However, please **note that this is not a research and development effort.**

II. Objective:

OBIM is requesting information to develop a system that is scalable to store, match, and analyze biometric data capable of performing the functions detailed in items A through H below. For one or more of the items, the respondent shall address the required technical approach, including architecture, methods, current and emerging tools, and applicable best practices as well as security and privacy protections to achieve the desired objectives.



A. **Identity Deconfliction**: OBIM desires a system that has the ability to determine a person's unique identity based on a combination of biometric and biographic traits and contextual data. Respondents should also detail the best approach to determine a level of confidence based on the combination of traits used in the identification, and should provide methods for continuous identity management, including enrollment of identities, splitting/merging of identities, and updating identity confidence levels based on new information.

B. **Advanced Biometric Matching**: OBIM is requesting information on a system through the application of state-of-the-art techniques that can improve the accuracy and efficiency of its biometric services. Specifically, OBIM is interested in learning about:

1. Approaches and architectures for leveraging multiple biometric modalities in very large-scale systems to improve accuracy and identity assurance and to decrease failure-to-enroll rates. The provided information must address multimodal fusion techniques and include the known benefits and architectural limitations of such approaches.

2. Methods to reduce the computational requirements of biometric matching without decreasing accuracy. Examples of such techniques could include ways to decrease the need for full gallery searches (1:N), decrease the penetration rate of 1:N searches, and leverage multiple modalities to reduce computational intensity.

3. Approaches and architectures for decreasing operations and maintenance (O&M) costs for large-scale systems, including system virtualization, footprint, energy usage, and licensing costs.

C. **Advanced Biographic Searching**: OBIM is requesting information on a system through the application of state-of-the-art techniques that can improve the accuracy and efficiency of its biographic pre-verify services. OBIM is interested in various approaches for using biographic information to assist in the deconfliction and disambiguation of identity information. The biographic information would typically contain various elements and combinations of biographic information, including name, birth date and location, gender, and citizenship. In particular, OBIM is interested in performance in terms of accuracy, speed, and other performance profiles and products in production or currently in technical readiness testing and evaluation to facilitate more 1:1 transactions.

D. **High-Performance Transaction Processing**: OBIM requests information on the status, trends, and direction of large-scale biometric and biographic transaction processing systems and related technologies, including processing speeds and high-volume, high-reliability, and high-availability systems and architectures. Information should also be provided on demonstrated scalability and managing a high volume of transactions with varying response requirements.

E. **Business Intelligence Capabilities**: Respondents should provide information on business



intelligence architectures, techniques, and software where these capabilities provide better historical, current, and predictive analysis of available biometric and biographic information, including the analysis of both operational and content data.

F. **Storage**: Respondents should provide information on current capabilities, trends and alternatives to store, index, and correlate structured and unstructured data in all formats regardless of type or size. In addition respondents should present their ability for organizing and retrieving large quantities of data and/or images ($>10^9$). This should also include hardware specifications. The Government is interested in industry's experience and offerings for tiered and/or distributed storage and in minimizing processing and storage overhead, while maximizing input/output performance, the retrieval of data, application independence, portability, and data integrity.

G. **Information Linking**: OBIM seeks information on the best methods and techniques to link data items to unique identities, and to maintain the linkage on an ongoing basis, including capturing additional links, removing links, and providing linkage information to stakeholders as permitted according to a predefined set of business rules. Linked information could be made available in a variety of ways, including publish/subscribe methods. It is assumed that the actual data would still reside in separate systems/databases within and outside DHS.

H. **International Biometrics**: Respondents should provide information on developing an architecture capable of supporting and managing a federated international biometric and identity-verification schema with multiple stakeholders worldwide that ensures responsiveness while tailoring privacy, security, and person-centric data to individual stakeholder needs. An analogous business and technical construct might be the topology for international automated teller machines, banking, clearinghouses, and credit/debit cards.

III. Submission

Interested parties shall follow submission instructions posted on the Fed Biz Ops notice with this RFI announcement.

Note: Non-government staff support personnel will not have access to RFIs labeled by the submitters as Government Access Only.

A. This notice is for market research and planning purposes only and does not commit the Government to any contractual agreement. This is not a request for proposal. The Government does not intend to award a contract based on responses under this announcement nor otherwise pay for preparing any information sent for the Government use. Any submission will become the property of the Government and will not be returned to the submitter.

B. Email instructions are posted on Fed Biz Ops with this RFI announcement.



Submissions are limited to 10 pages per item in Section II A through H and no more than 50 pages in total.